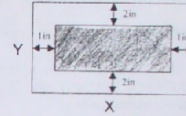


A page that is  $x$  inches wide and  $y$  inches high contains 30 square inches of print. The top and bottom margins are 2 inches and the side margins are each 1 inch.

- Find a function for the total area of the page.
- What is the domain?
- Graph the function by hand using what you know about asymptotes.
- Find the  $x$  so that the amount of paper is minimized. Find it graphically.



$$\textcircled{1} A = XY$$

$$\textcircled{2} 30 = (x-2)(y-4)$$

Solve for  $y$  and plug into  $\textcircled{1}$

$$\text{Eq } \textcircled{1}$$

$$A = xY$$

$$A = \frac{x}{1} \left( \frac{22+4x}{x-2} \right)$$

$$\textcircled{a} \quad A = \frac{4x^2 + 22x}{x-2}$$

$$\textcircled{b} \quad \text{Domain } (2, \infty)$$

$$\textcircled{c} \quad \text{Graphing}$$

$$\frac{30}{x-2} = y-4$$

$$y = \frac{30}{x-2} + 4$$

$$y = \frac{30}{x-2} + \frac{4}{1} \cdot \frac{(x-2)}{(x-2)}$$

$$y = \frac{30}{x-2} + \frac{4x-8}{x-2}$$

$$y = \frac{22+4x}{x-2}$$

• Zeros of top  $4x^2 + 22x = 0$

$$(x)(4x+22) = 0$$

$$x = 0, -\frac{22}{4} \quad x = -h$$

• Zeros of bottom  $x-2 = 0$

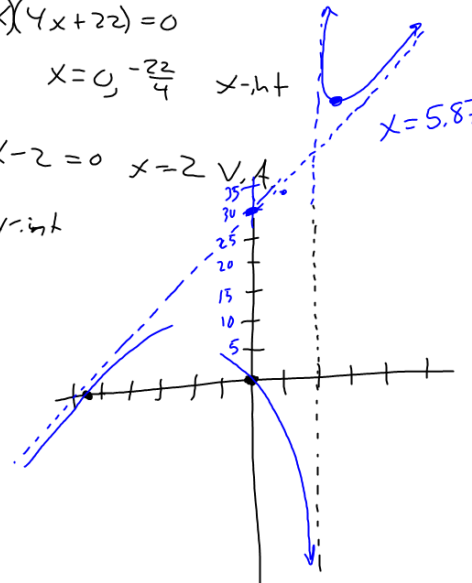
$$x = 2$$

• Plug in zeros  $y=0$ ,  $y$ -int

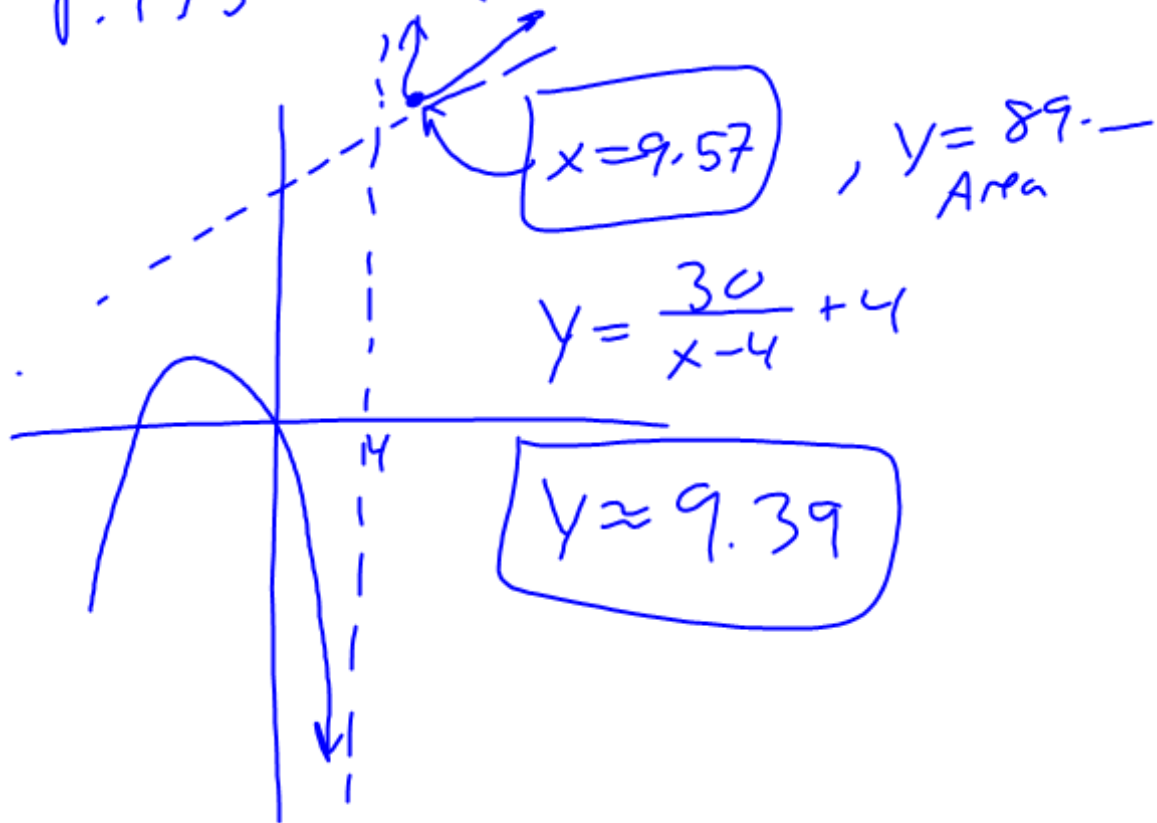
• Slant


$$x-2 \overline{) 4x^2 + 22x + 0}$$

$$\begin{array}{r} 4x+30 \\ \underline{4x^2-8x} \phantom{+0} \\ 30x+0 \\ \underline{30x-60} \\ 60 \end{array}$$



P. 173 #136





Year	Amount, y
<u>1990</u>	16.5
<u>1991</u>	16.9
<u>1992</u>	17.7
<u>1993</u>	18.8
<u>1994</u>	20.8
<u>1995</u>	23.1
<u>1996</u>	24.9
<u>1997</u>	26.3
<u>1998</u>	28.2
<u>1999</u>	30.7
<u>2000</u> to	33.9

Try p.173 #141

Tues - 3 graphing problems

Thur - Application Problem

- 2.8 problem

172

p.172 pick some from #109-118, 123-130  
#136, 141

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Sect. 2.2 #39, 40, 42, 45, 49, 53-60(2), 61-72(2)

Sect. 2.3 #1-7

Sect. 2.3 #17, 32, 45, 47, 49, 50, 52

Sect. 2.4 #1-4(vocab), #1-4, 5, 6, 11, 15-17, 25, 26, 29, 30, 31, 34, 37-41, 47, 50, 65, 67-72(4)

Sect. 2.5 My Five Problems (at the end of this file [here](#))

**Sect. 2.5 #2, 3, 5, 7, 9-24(skip 2), 25, 26, 30-34(2)**

Sect. Review, p. 169 #6, 35-42(2), 47, 56, 63, 72, 79, 91-100(2), 101-104(2), Sketch 87 without calculator

Sect. 2.6 #1-6(b and c), 7-12

Sect. 2.6 #13-23(odd), 27 & 28(just graph and look at the transformations), 31-35

Sect. 2.7 #19-25(odd), 43-47(odd)

Rational Practice Test

p. 172 #109-118, 123-130, 136, 141 (pick some)

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Done